SPECinc

Hawkeye: A new Sensor for In Situ Microphysical Measurements of Subvisible Cirrus in the TTL

subvisible cirrus layer



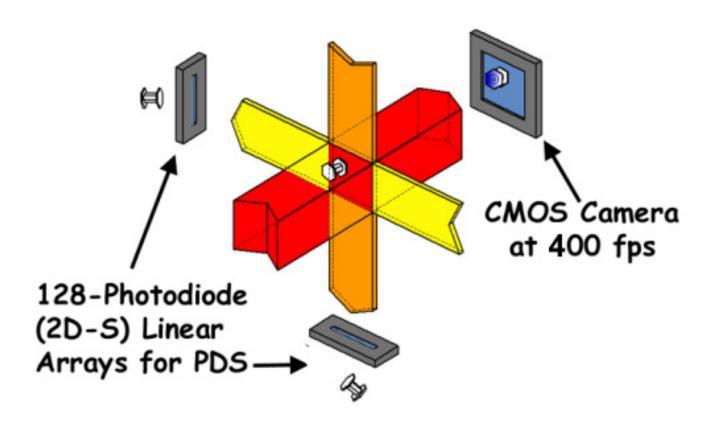
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Hawkeye is an Outgrowth of the 3V-CPI

- 3V-CPI combines a Cloud Particle Imager (CPI), which produces high-resolution (2.3-μm pixel digital camera) images, with the 2D-S (dual channel 10-μm optical linear array), where the 2D-S is used to trigger the CPI imaging camera.
- Hawkeye modifies one 2D-S channel to 50-μm pixel resolution and incorporates a Fast Forward Scattering Spectrometer Probe (FSSP) that records individual particle statistics and measures size distribution from 0.5 to 50 μm.

3V-CPI Electro-optics



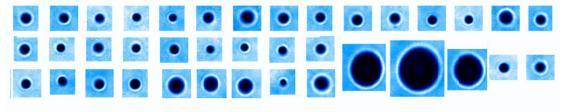
3V-CPI Installed on the SPEC Learjet



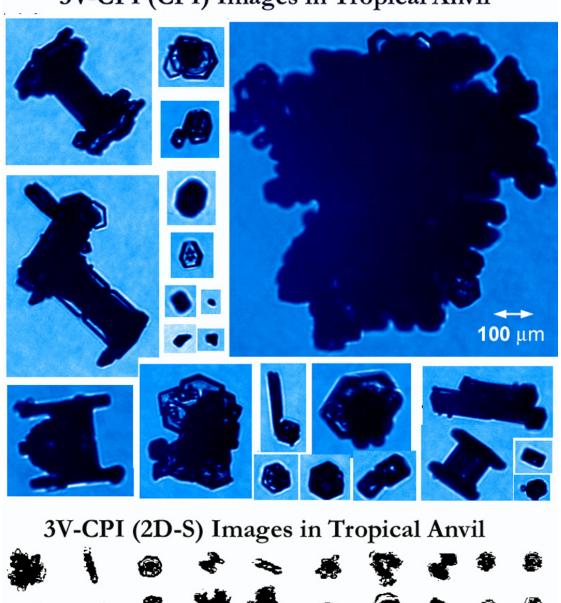


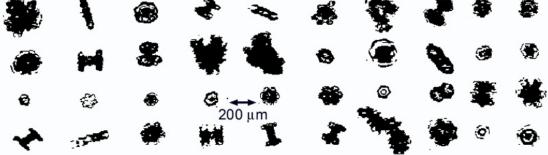
3V-CPI Images from NCAR GV (8-15-2010) in PREDICT

3V-CPI (CPI) Images of Water Drops in Cumulus

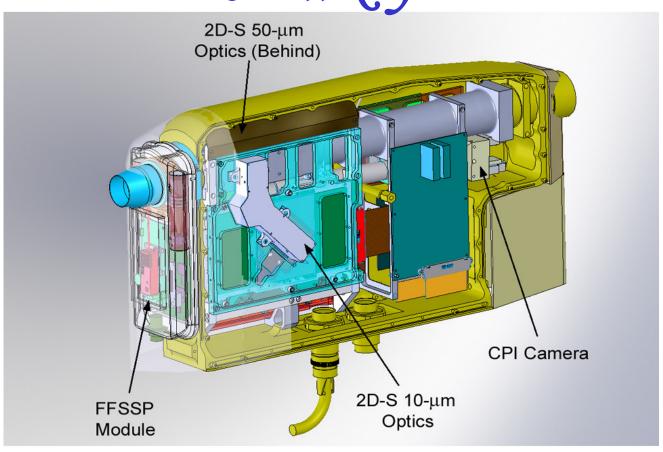


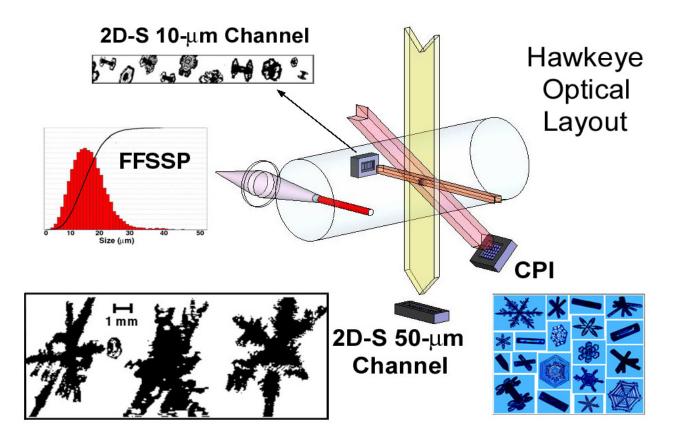
3V-CPI (CPI) Images in Tropical Anvil





Hawkeye





SUMMARY

- Hawkeye is a standalone sensor and hardened data acquisition system that will be used to measure the microphysical properties of SVC in the TTL.
- Hawkeye measures particle size distributions from 0.5 μm to 1 cm and records high-resolution particle images from 10 μm to 2 mm.
- The sensor head and hardened data acquisition system each weigh about 60 lbs.
- Hawkeye requires about 2.5 KW of 115 VAC 60 Hz power.